

MARKED-UP COPY OF AMENDMENTS TO THE CLAIMS

This is a reissue application. Therefore, please amend the claims in accordance with 37 C.F.R. 1.173(b)(2).

Amendments to the Claims

1. (Amended Three Times) An acetabular prosthesis for cement implantation comprising:

a) a prosthesis full or partial cup body having a cup body wall with a cup body wall thickness, the body having a concave surface on a distal side of the cup body, a convex surface on a [promimal] proximal side of the cup body and an annular rim;

b) a superior flange extending in a superior direction from adjacent the annular rim, a posterior flange extending in a posterior direction from adjacent the annular rim, and an inferior flange extending in an inferior direction from adjacent the annular rim, each of said superior flange, posterior flange and inferior flange including at least two bone screw receptive openings;

[b]c) a liner that registers with the cup body, the liner having a liner wall with a liner wall thickness much greater than the cup body wall thickness and a concave surface and a convex surface that registers within the concave surface of the cup body;

[c]d) the cup body wall having a plurality of openings therethrough;

[d]e) some of the cup body wall openings being bone screw receptive openings that are reinforced with an annular reinforcement positioned on the [distal] proximal side of the cup body;

[e]f) a cement mantle for affixing the plastic liner to the cup body;

[f) the cup body having a peripheral buttress portion for supporting a portion next to the annular rim and extending distally downwardly from the concave surface, of cement of the cement mantle at a peripheral interface position in between the liner and body;]

g) a concave surface of the cup body wall extending distally to a greater extent adjacent the superior and posterior flanges than at other positions around the rim of the cup;

[g]h) wherein the cement mantle flows through at least some of the openings upon assembly of the cup liner to the cup body.

Kindly cancel claim 2 without prejudice.

3. (Original) The prosthesis of claim 1 wherein the cup body is about 2 mm in thickness.

4. (Original) The cemented acetabular prosthesis of claim 1 wherein the cup body is hemispherically shaped.

5. (Original) The cemented acetabular prosthesis of claim 1 wherein the cup body is a partial hemispherical shape.

6. (Original) The cemented acetabular prosthesis of claim 1 wherein the liner has a plastic surface.

7. (Original) The cemented acetabular prosthesis of claim 1 wherein the liner is plastic.

8. (Original) The prosthesis of claim 1 further comprising an arcuate slot that extends through the cup body wall along and near the periphery of the cup body.

Kindly cancel claim 9 without prejudice.

10. (Amended) The prosthesis of claim 1 wherein the [buttress] distally extending concave surface extends at least 45 degrees [about the periphery of] around the rim of the cup body.

11. (Amended) The prosthesis of claim 1 wherein the [buttress] distally extending concave surface extends at least 90 degrees [about the periphery of] around the rim of the cup body.

12. (Amended) The prosthesis of claim 1 further comprising an annular reinforcement that surrounds [each] at least some of the cup body openings [opening].

13. (Amended Three Times) An acetabular prosthesis for cement implantation comprising;

a) a thin prosthesis cup body having a cup body wall with a thickness of between 1 and 3 mm, the body having a distal concave surface area, a central portion, a proximal convex surface, and an annular rim defining a cup periphery;

b) [the cup body having at least a pair of flanges that extend away from the cup central portion]the cup body having a superior flange extending in a superior direction from adjacent the annular rim, a posterior flange extending in a posterior direction from adjacent the annular rim, and an inferior flange extending in an inferior direction from adjacent the annular rim, each of said superior flange, posterior flange and inferior flange including at least two bone screw receptive openings;

c) a plastic liner that can be cemented to the concave surface area of the cup body, the liner having a wall with a thickness much greater than the thickness of the cup body and a concave surface and a convex surface that registers with the concave surface area of the cup body;

d) the cup body wall having a plurality of openings therethrough;

e) some of the cup body wall openings being bone screw receptive openings that are reinforced with an annular reinforcement that extends away from the convex surface of the cup body;

f) a cement mantle for affixing the plastic liner to the cup body;

g) [the cup body having a peripheral buttress extending downwardly from the distal side of the cup body for supporting a portion of cement of the cement mantle at a peripheral interface position in between the liner and body] a concave surface of the cup body wall extending distally to a greater extent adjacent the superior and posterior flanges than at other portions around the rim of the cup; and

h) wherein the cement mantle flows through at least some of the openings upon assembly of the cup liner to the cup body.

14. (Amended Twice) An acetabular cup prosthesis comprising:

a) a cup [member] body having an inner, distal concave surface and an outer, proximal convex surface;

b) the cup [member] body having an apex and a rim that extends about the periphery of the cup member, the rim having a portion that defines a rim plane;

c) a curved flange portion that extends a partial distance around the cup member and away from the convex surface of the cup member, the flange portion having lower surface and an edge that falls in a flange plane that forms an angle with the rim plane; and

d) [a buttress mounted on the distal concave surface of the cup body and at the lower surface of the flange portion and that extends distally downwardly from the flange portion, the buttress] a concave surface of the cup body wall extending distally to a greater extent adjacent the flange portion and being curved to generally follow the curved flange member.

15. (Amended) The acetabular cup prosthesis of claim 14 wherein the flange member and [buttress] distally extending concave surface each extend around the cup member a measure of between about 45 and 135 degrees.

16. (Amended) The acetabular cup prosthesis of claim 14 wherein the flange member and [buttress] distally extending concave surface each extend around the cup member a measure of at least ninety degrees.

17. (Original) The acetabular cup prosthesis of claim 14 wherein the flange member forms a reverse curved portion with the convex outer surface of the cup member.

18. (Original) The acetabular cup prosthesis of claim 14 wherein the flange plane and the rim plane form an angle of between about 90 and 180 degrees.

19. (Original) The acetabular cup prosthesis of claim 14 further comprising at least one opening through the cup member.

20. (Original) The acetabular cup prosthesis of claim 14 further comprising a plurality of openings extending through the cup member.

21. (Original) The acetabular cup prosthesis of claim 14 further comprising at least one opening through the cup member and a bone screw for fastening the cup member to a patient's bone tissue at the opening.

22. (Original) The acetabular cup prosthesis of claim 14 further comprising a plurality of openings extending through the cup member, a bone screw for fastening the cup member to a patient's bone tissue at one of openings, and some of the openings being receptive of bone cement and for conveying bone cement between the inner concave and outer convex surfaces of the cup member.

23. (Amended Twice) An acetabular cup prosthesis comprising:

a) a thin cup [member] body having a distal side with an inner concave surface, a proximal side with an outer convex surface, and a cup wall;

b) the cup [member] body having an apex and a rim that extends about the periphery of the cup [member] body, the rim having a portion that defines a rim plane;

c) a curved flange portion that extends a partial distance around the cup member and away from the convex surface of the cup [member] body, the flange portion having a lower surface and an edge that falls in a flange plane that forms an obtuse angle with the rim plane;
and

d) [a buttress mounted on the distal side at the lower surface of the flange portion and that extends distally downwardly from the flange portion, the buttress being curved]a

concave surface of the cup wall extending distally to a greater extent adjacent the flange portion.

24. (Original) The acetabular cup prosthesis of claim 23 wherein the cup wall has a thickness of about 2 mm.

25. (Original) The acetabular cup prosthesis of claim 23 further comprising a bone screw and wherein the cup wall has an opening that receives the bone screw.

26. (Original) The acetabular cup prosthesis of claim 25 further comprising an annular boss that surrounds the bone screw opening.

27. (Amended) The acetabular cup prosthesis of claim 23 further comprising an annular boss that surrounds the bone screw opening on the convex surface of the cup [member] body.

28. (Original) The acetabular cup prosthesis of claim 24 further comprising a plurality of openings including at least some openings that are reinforced with thickened annular portions of the wall next to the openings, a bone screw, and wherein the bone screw fits the opening.

29. (Amended) The acetabular cup prosthesis of claim 24 further comprising a plurality of openings extending through the cup [member] body, at least some of the openings being surrounded by thickened portions of the cup [member] body.

30. (Amended) The acetabular cup prosthesis of claim 29 wherein the thickened portions are on the convex surface of the cup [member] body.

31. (Amended) The acetabular cup prosthesis of claim 24 further comprising a slot that extends through the cup [member] body and about the cup [member] body a distance.

32. (Amended) The acetabular cup prosthesis of claim 24 wherein the flange member extends around the cup [member] body a measure of between about 45 and 135 degrees.

33. (Original) The acetabular cup prosthesis of claim 24 wherein the flange member forms a reverse curved portion with the convex outer surface of the cup member.

34. (Original) The acetabular cup prosthesis of claim 24 further comprising a plurality of openings extending through the cup member at the flange portion.

35. (Amended Twice) An acetabular cup prosthesis comprising:

- a) a cup [member] body having a distal side with an inner concave surface and a proximal side with an outer convex surface;
- b) the cup [member] body having an apex and a rim that extends about the periphery of the cup [member] body, the rim having a portion that defines a rim plane;
- c) [a plurality of circumferentially spaced, radially extending flange portions that each extend a partial distance around the cup member and away from the cup rim] a superior flange extending in a superior direction from adjacent the rim, a posterior flange extending in a posterior direction from adjacent the rim, and an inferior flange extending in an inferior direction from adjacent the rim, each of said superior flange, posterior flange and inferior flange including at least two bone screw receptive openings; and
- d) [a buttress mounted on the distal surface of the cup member, and that extends distally downwardly from the rim plane] the inner concave surface extending distally from the rim plane to a greater extent adjacent the superior and posterior flanges than at other positions around the rim of the cup body.

36. (Amended) The acetabular cup prosthesis of claim 35 wherein the [buttress] distally extending concave surface is curved to follow the rim.

37. (Amended Twice) The acetabular cup prosthesis of claim 35 wherein the [buttress] distally extending concave surface extends about 105-115 degrees about the cup [member] body along a curved path.

38. (Amended Twice) The acetabular cup prosthesis of claim 35 wherein [each flange] the superior flange, the posterior flange and the inferior flange each extend[s] around the cup [member] body a measure of between about 20 and 45 degrees.

Kindly cancel claims 39 and 40 without prejudice.

41. (Amended) The acetabular cup prosthesis of claim 36 wherein at least [some of the flanges form] one of the flanges forms an acute angle with the rim plane.

42. (Amended) The acetabular cup prosthesis of claim 36 wherein at least [some of the flanges form] one of the flanges forms an angle with the rim plane of between about 15 and 45 degrees.

Kindly cancel claims 43 – 46 without prejudice.

47. (Amended Twice) An acetabular prosthesis, comprising:

(a) a cup body having (i) an inner, distal cup body concave surface adapted to receive a liner, (ii) a secondary concave surface extending distally from the cup body, (iii) an outer, proximal convex surface, and (iv) a plurality of openings;

(b) a superior flange extending in a superior direction from the cup member, a posterior flange extending in a posterior direction from the cup body, and an inferior flange extending in an inferior direction from the cup body, each of said superior flange, posterior flange and inferior flange including at least two bone screw receptive openings, wherein the secondary concave surface extends to a greater extent adjacent the superior and posterior flanges than at other positions around the cup body, wherein the superior flange, posterior flange and inferior flange extend from the outer, proximal convex surface of the cup body, and wherein the secondary concave surface is adapted to at least partially contain flow of securing material.

Kindly cancel claim 48 without prejudice.

49. (Amended Twice) The acetabular prosthesis of claim 47, wherein at least one of the flanges is angled relative to the cup body.

Kindly cancel claim 50 without prejudice.

51. (Amended Twice) The acetabular prosthesis of claim 47, wherein at least one of the flanges is integral with the cup body.

Kindly cancel claim 52 without prejudice.

53. (Amended Twice) The acetabular prosthesis of claim 47, wherein at least one of the flanges extends from the cup body in a direction angled relative to a diameter of the prosthesis.

Kindly cancel claims 54 and 55 without prejudice.

56. (Amended Twice) An acetabular prosthesis, comprising:

(a) an at least partially cup-shaped device having an inner concave surface for receiving a liner adapted to be cemented within the device;

(b) the device having a distally extending concave surface extending distally from the at least partially cup-shaped device;

(c) a superior flange extending in a superior direction from the at least partially cup-shaped device, a posterior flange extending in a posterior direction from the at least partially cup-shaped device, and an inferior flange extending in an inferior direction from the at least partially cup-shaped device, each of said superior flange, posterior flange and inferior flange including at least two bone screw receptive openings, wherein the flanges are adapted for fixation of the at least partially cup-shaped device in a patient's acetabular region, wherein the concave surface extends distally to a greater extent adjacent the superior and posterior flanges than at other portions around the at least partially cup-shaped device; and

(d) a liner that register with the at least partially cup-shaped device, the liner adapted to be cemented in the at least partially cup-shaped device.

57. (Amended) The acetabular prosthesis of claim 56 wherein the at least partially cup-shaped device has a plurality of openings for use as bone screw receptive openings or for allowing cement to flow through the device.

Kindly cancel Claim 58 without prejudice.

59. (Amended) The acetabular prosthesis of claim 56, wherein at least one of the flanges is angled relative to the at least partially cup-shaped device.

Kindly cancel claim 60 without prejudice.

61. (Amended) The acetabular prosthesis of claim 56, wherein at least one of the flanges is integral with the at least partially cup-shaped device.

Kindly cancel claim 62.

63. (Amended) The acetabular prosthesis of claim 56, wherein at least one of the flanges extends from the cup member in a direction angled relative to a diameter of the at least partially cup-shaped device.

Kindly cancel claims 64 and 65.

66. (Amended) An acetabular prosthesis, comprising:

(a) a cup body for receiving a liner adapted to be cemented within the cup body;
and

(b) a superior flange extending in a superior direction from the cup body, a posterior flange extending in a posterior direction from the cup body, and an inferior flange extending in an inferior direction from the cup body, each of said superior flange, posterior flange and inferior flange including at least two bone screw receptive openings; wherein the cup body further defines a concave surface extending distally to a greater extent adjacent the superior and posterior flanges than at other positions around a rim of the cup body and in use adapted for at least one of: at least partially containing cement in place, at least partially securing a liner in position, at least partially maintaining cement in contact with the liner at the securing member surface, at least partially preventing the cement from traversing from the cup body to the fixation members, and any combination thereof.

67. (Amended Twice) An acetabular prosthesis comprising:

(a) a cup, the cup including a superior flange extending in a superior direction relative to the cup, a posterior flange extending in a posterior direction relative to the cup, and an inferior flange extending in an inferior direction relative to the cup, each of said superior flange, posterior flange and inferior flange including at least two bone screw receptive openings;

(b) a liner received within the cup; and

(c) a cement mantle securing the liner to the cup;

wherein the cup comprises a concave surface extending distally to a greater extent adjacent the superior and posterior flanges than at other positions around the cup such that the concave surface supports and maintains at least one of the cement mantle and the liner in place.

68. (Amended) The acetabular prosthesis of claim 67, wherein the cup has a plurality of cup openings for use as bone screw receptive openings or for allowing cement to flow through the cup.

69. (Amended) The acetabular prosthesis of claim 67, wherein at least one of the flanges are angled relative to the cup.

Kindly cancel claim 70 without prejudice.

71. (Amended) The acetabular prosthesis of claim 67, wherein at least one of the flanges is integral with the cup.

Kindly cancel claim 72 without prejudice.

73. (Amended) The acetabular prosthesis of claim 67, wherein at least one of the flanges radially or non-radially extends from the cup.

74. (Amended) The acetabular prosthesis of claim 67, wherein at least one of the flanges extends from the cup in a direction angled relative to the diameter of the prosthesis.

Kindly cancel claim 75 without prejudice.

76. (Amended Twice) An acetabular cup prosthesis for cement implantation, comprising:

(a) a cup body having a distal side with an inner concave surface and a proximal side with an outer convex surface;

(b) a superior flange extending in a superior direction from the cup body, a posterior flange extending in a posterior direction from adjacent the cup body, and an inferior flange extending in an inferior direction from the cup member, each of said superior flange, posterior flange and inferior flange including at least two bone screw receptive openings;

(c) the inner concave surface extending distally from the cup body to a greater extent adjacent the superior and posterior flanges than at other positions around the cup body; and in use adapted to capture at least a portion of cement used within the cup body.